

Dkt. 66710-A/JPW/PJP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Milan N. Stojanovic
Serial No. : 10/613,363
Filed : July 3, 2003
For : MOVEMENT OF MULTI-ENZYMATIC NANOASSEMBLIES ON
RECOGNITION LANDSCAPES

1185 AVENUE OF THE AMERICAS
NEW YORK, NEW YORK 10036
November 3, 2003

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INFORMATION DISCLOSURE STATEMENT

In compliance with his duty of disclosure under 37 C.F.R. §1.56, applicant directs the Examiner's attention to the following references, which are listed on the accompanying form PTO-1449 (Exhibit 1). Copies of references 1-17 attached hereto as Exhibits 2-17 respectively, except for reference number 13.

1. Ballardini, R., Balzani, V., Credi, A., Gandolfi, M. T. & Venturi, M. Artificial Molecular-Level Machines: Which Energy To Make Them Work, *Acc. Chem. Res.* **34**, 445-455 (2001). (Exhibit 2)
2. Yurke, B., Turberfield, A. J., Mills, A. P. Jr., Simmel, F.C., & Neumann, J. L.: A DNA-fueled molecular machine made of DNA, *Nature* **406**, 605-608 (2000). (Exhibit 3)
3. Kelly, T. R., de Silva, H. & Silva, R. A. Unidirectional rotary motion in a molecular system, *Nature* **401**, 150-152

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(1999). (Exhibit 4)

4. Mao, C., Sun, W., Shen, Z. & Seeman N.C.:A nanomechanical device based on the B-Z transition of DNA, *Nature* **397**, 144-146 (1999). (Exhibit 5)
5. Soong, R.K., Bachand, H.P., Neeves, H.P., Olkhovets, A.G., Craighead, H.G.S & Montemagno, C.D. Powering an inorganic nanodevice with a biomolecular motor, *Science* **290**, 1555-1558 (2000). (Exhibit 6)
6. Jimenez, M.C., Dietrich-Buchecker, C., Sauvage, J. -P. Towards synthetic molecular muscles: construction and stretching of a linear rotaxane dimer, *Angew. Chem. Int. Edn.* **39**, 3284-3286(2000). (Exhibit 7)
7. Stojanovic, M.N., de Prada, P. & Laundry, D. W. Homogenous Assays Based on Deoxyribozymes, *Nucleic Acids Res.* **28**, 2915-2918(2000). (Exhibit 8)
8. Stojanovic, M.N., de Prada, P. & Laundry, D. W. Catalytic Molecular Beacons, *Chembiochem.* **2**, 411-415(2001). (Exhibit 9)
9. Stojanovic, M.N., de Prada, P. & Laundry, D. W. Fluorescent Sensors Based on Aptamer Self-Assembly, *J. Am. Chem. Soc.* **122**, 11547-11548(2000). (Exhibit 10)
10. Stojanovic, M.N., de Prada, P. & Laundry, D. W. Aptamer-Based Folding Fluorescent Sensor for Cocaine, *J. Am. Chem. Soc.* **123**, 4928-4931(2001). (Exhibit 11)
11. Stojanovic, M.N., Mitchell, T.E. & Stefanovich, D. Deoxyribozyme-Based Logic Gates, *J. Am. Chem. Soc.* accepted

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for publication, estimated publication date in May 2002.
(Exhibit 12)

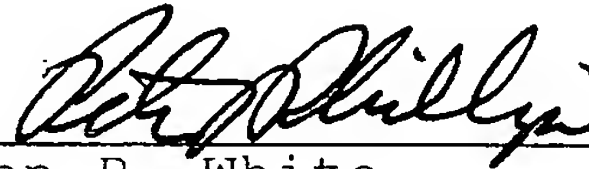
12. Li, Y. & Breaker, R.R. Deoxyribozymes: new players in the ancient game of biocatalysis, *Curr. Opin. Struct. Biol.* **9(3)**, 315-323(1999). (Exhibit 13)
13. Breaker, R.R. & Joyce, G.F.A DNA enzyme with Mg^{2+} -dependent RNA phosphodiesterase activity, *Chem. Biol.* **2**, 655-660(1995).
14. Santoro, S.W. & Joyce, G.F.A A general purpose RNA-cleaving DNA enzyme, *Proc. Natl. Acad. Sci.* **94** 4262-4266(1997).
(Exhibit 14)
15. Li, J. & Lu, Y. J. *Am. Chem. Soc.* **122**, 10466-10477(2000).
(Exhibit 15)
16. Guo, Z., Guilfoyle, R.J., Wang, R. & Smith, L.M. Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass support, *Nucleic Acids Res.* **22**, 5456-5465(1994). (Exhibit 16)
17. Kumar, A., Larson, O., Parodi, D. & Liang, Z. Silanized nucleic acids: a general platform for DNA immobilization, *Nucleic Acids Res.* **28**, E71(2000). (Exhibit 17)

Applicant believes that these references do not anticipate or render obvious applicants' claimed invention. Because this Information Disclosure Statement is being submitted before the mailing of a first Office Action on the merits, no fee is believed to be due. However, in the event that a first Office Action on the merits has been mailed which has not yet reached applicant's

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attorney, or has not yet been connected to the file in applicant's attorney's office, applicant hereby requests for consideration of this Information Disclosure Statement, pursuant to 37 C.F.R. \$1.97(c) and authorize the Office to Charge Deposit Account No. 03-3125 the amount of the petition fee in accordance with 37 C.F.R. \$1.17(p). In the event that a Notice of Allowance has been mailed, applicant hereby petitions, pursuant to 37 C.F.R. \$1.97(d), for consideration of this Information Disclosure Statement, and authorize the Office to charge Deposit Account No. 03-3125 the amount of the fee in accordance with 37 C.F.R. \$1.17(i).

Respectfully submitted,



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I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to:

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Alexandria, VA 22313-1450

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Peter J. Phillips Date
Reg. No. 29,691



Form PTO-1449	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. 66710-A/JPW/PJP	Serial No. 10/613,363
INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Milan N. Stojanovic	
		Filing Date July 3, 2003	Group

U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate

FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Subclass	Translation	
						Yes	No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

1	Ballardini, R., Balzani, V., Credi, A., Gandolfi, M. T. & Venturi, M. Artificial Molecular-Level Machines: Which Energy To Make Them Work, Acc. Chem. Res. 34 , 445-455 (2001).
2	Yurke, B., Turberfield, A. J., Mills, A. P. Jr., Simmel, F.C., & Neumann, J. L.: A DNA-fueled molecular machine made of DNA, Nature 406 , 605-608 (2000).
3	Kelly, T. R., de Silva, H. & Silva, R. A. Unidirectional rotary motion in a molecular system, Nature 401 , 150-152 (1999).

EXAMINER

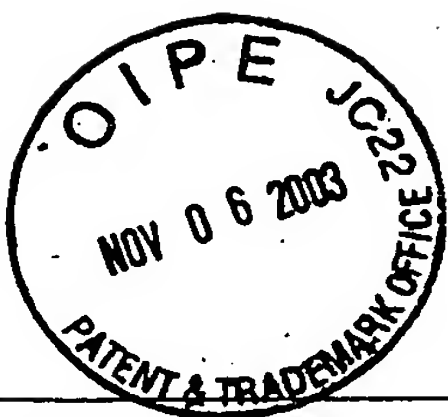
DATE CONSIDERED

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Exh. 1



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	4	Mao, C., Sun, W., Shen, Z. & Seeman N.C.A nanomechanical device based on the B-Z transition of DNA, <i>Nature</i> 397 , 144-146 (1999).			
	5	Soong, R.K., Bachand, H.P., Neeves, H.P., Olkhovets, A.G., Craighead, H.G.S & Montemagno, C.D. Powering an inorganic nanodevice with a biomolecular motor, <i>Science</i> 290 , 1555-1558 (2000).			
	6	Jimenez, M.C., Dietrich-Buchecker, C., Sauvage, J. -P. Towards synthetic molecular muscles: construction and stretching of a linear rotaxane dimer, <i>Angew. Chem. Int. Edn.</i> 39 , 3284-3286 (2000).			
	7	Stojanovic, M.N., de Prada, P. & Laundry, D. W. Homogenous Assays Based on Deoxyribozymes, <i>Nucleic Acids Res.</i> 28 , 2915-2918 (2000).			
	8	Stojanovic, M.N., de Prada, P. & Laundry, D. W. Catalytic Molecular Beacons, <i>Chembiochem.</i> 2 , 411-415 (2001).			
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	12	Li, Y. & Breaker, R.R. Deoxyribozymes: new players in the ancient game of biocatalysis, <i>Curr. Opin. Struct. Biol.</i> 9(3) , 315-323 (1999).			
	13	Breaker, R.R. & Joyce, G.F. A DNA enzyme with Mg ²⁺ -dependent RNA phosphodiesterase activity, <i>Chem. Biol.</i> 2 , 655-660 (1995).			
	14	Santoro, S.W. & Joyce, G.F. A general purpose RNA-cleaving DNA enzyme, <i>Proc. Natl. Acad. Sci.</i> 94 4262-4266 (1997).			
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	16	Guo, Z., Guilfoyle, R.J., Wang, R. & Smith, L.M. Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass support, Nucl. Acids Res. 22, 5456-5465(1994).			
	17	Kumar, A., Larson, O., Parodi, D. & Liang, Z. Silanized nucleic acids: a general platform for DNA immobilization, Nucl. Acids Res. 28, E71 (2000).			
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